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 CENTRAL INTELLIGENCE AGENCY
 INFORMATION FROM
 FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT
 CD NO.

50X1-HUM

COUNTRY USSR

DATE OF
INFORMATION 1950

SUBJECT Economic - Coal mining

DATE DIST. 12 Dec 1950

HOW
PUBLISHED Monthly periodicalsWHERE
PUBLISHED Moscow

NO. OF PAGES 3

DATE
PUBLISHED Sep - Oct 1950SUPPLEMENT TO
REPORT NO.

LANGUAGE Russian

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KUZBASS ADOPTS NEW MACHINERY AND MINING METHODS

DONBASS COMBINE PROVES EFFECTIVE IN MINE IMENI KIROV

K. P. Krivobok
 Ugol', No 9, Sep 50

The Mine imeni Kirov of the Kemerovugol' Combine, one of the largest coal enterprises of the Kuzbass, currently celebrating its fifth anniversary, is equipped with all the most modern machinery and equipment. Five Donbass combines and 16 heavy KMP-1 cutting machines are employed to remove coal from the mine face, 160 scraper conveyers and 90 belt conveyers transport the coal from that point, and 13 loading machines load coal and rock during development work. Shooting, underground transport, and loading the coal onto railroad cars are completely mechanized and, as of June 1950, loading coal at the mine face was 30 percent mechanized.

The Mine imeni Kirov regularly exceeds the plan for coal output. During the first half of 1950 its average daily output amounted to 4,553 tons, and in June to 4,603. The coal output increased 10.5 percent over the first half of 1949 and labor productivity in actual mining increased 22 percent. The mine works at a profit and has accumulated savings considerably above the plan.

At present the Mine imeni Kirov is working six seams ranging in thickness from 1.2-2.3 meters and with an angle of dip of 6-15 degrees. Seams more than 1.4 meters thick are being worked by the long-pillar system. Eighteen mine faces with an average length of 120 meters are in operation.

Many years of experience have shown that mine faces being worked by the long-pillar method along the rise of the seam have better technical and economic indexes than those worked along the strike of the seam. In the Mine imeni Kirov, eight mine faces, 80-100 meters long and dipping from 5 to 12 degrees, are being worked along the rise of the seam. These mine faces have advanced at an increased speed and the output at the face has risen 20 percent.

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Before the end of 1950 it is planned to reduce the number of active mine faces from 18 to 16 and to put these on a cycle schedule completing one cycle each 24 hours. This should assure an increase of 17 percent in the coal output.

The number of Donbass combines employed in the Mine imeni Kirov is to be increased from five to eight before the end of 1950. The average monthly productivity of the combine for 5 months of 1950 was 6,164 tons, as against a norm of 5,200. The highest monthly productivity of the combine, 9,477 tons, was achieved at mine face No 25 in the Snyatkovskiy seam; At mine face No 23 in the Boldyrevskiy seam, the combine mined 9,000 tons in a month. It can be stated positively that the Donbass combine is a very effective machine in mines where conditions are similar to those in the Mine imeni Kirov and where the coal seam is up to 1.6 meters thick. It use will assure high coal output and increased labor productivity.

KUZBASS IMPROVES BACKFILLING EQUIPMENT

L. S. Sudakovich
Mekhanizatsiya Trudoyemkikh i
Tyazhelykh Rabot, No 10, Oct 50

The fight against underground fires in Kuzbass mines is carried on mainly by backfilling the worked-out areas in coal seams. This method is used both for putting out fires in progress and for preventing future fires. The clay pulp used for backfilling is prepared and carried along the surface of the mine to the opening or specially made borehole through which it is to be dropped into the mine.

Since clay is unevenly distributed at the surface of Kuzbass mines, there are two different methods of preparing the pulp. In cases where there is a clay overburden of more than 4 meters the pulp is prepared in a pit right at the mine. Clay is removed and reduced to pulp by water at a pressure of 4-6 atmospheres carried by pipe to a hand-directed hydromonitor with a nozzle 18-20 millimeters in diameter. In cases where the clay deposits are located at a distance from the mine, a group of pits is made ready to prepare the pulp. Stationary hydromonitors of the Soyuzzoloto or Hydrotorf type, operating with a water pressure of 8-12 atmospheres, are set up in these pits. The pulp is carried to the receiving sump of the mud-pumping station where 8NZ-type mud pumps pump it through the network of pulp pipes to the points from which it is to be poured into the mines.

In the Prokop'yevsk region of the Kuzbass, about 30 percent of the pulp made for backfilling purposes is at present being prepared in pits at the mines. However the distance over which pulp, prepared in groups of pits, must travel to reach the mine is increasing each year and amounts to 6-7 kilometers in some cases in the Prokop'yevsk region. Consequently, every effort must be made to improve pulp transport conditions.

The Prokop'yevsk Special Office for Combating Underground Fires has employed a number of pumps for pumping pulp through pipes. These include piston pumps, centrifugal sand pumps, and centrifugal mud pumps. However, none of these is completely adequate for pumping pulp over long distances. The author of this

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article proposed increasing the rate of revolutions of the centrifugal pump from 750 to 1,000 per minute. This was done in 1948 in all cases where pulp was prepared in a group of pits in the Prokop'yevsk region. It increased the speed of movement of the pulp through the pipes, decreased the danger that the pipes would freeze in winter, and resulted in a yearly saving of more than 350,000 rubles in the Prokop'yevsk region alone.

Engineers must now design a centrifugal mud pipe with a speed rate of 1,500 revolutions per minute, which will solve the task of transporting pulp to great distances. The ordinary 8NZ mud pump, operating at a speed of 1,000 revolutions per minute, has been sending pulp to a distance of more than 5 kilometers in winter and summer. Higher-powered pumps will permit transport for a distance of 20 kilometers without particular difficulty.

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